The number of hooks does not limit this method as long as all radiuses are drawn from the same center.

Su⁵ A9)

The example of CAD was used as an example only. Rather, it the path of the tool which will always be the same regardless of what method is used to find the needed coordination points, angles and radius the sum of E + R. See Figure 5 and it is this that is the claimed invention.

Even if extremely short straight lines are used instead of the curved radius (E + R) as a tool path, the coordination of the end points will describe the points which still fall on the radius (E + R). Using extremely short lines instead of the curved radius (E + R) is just a different way to do the process described above. This method is an alternative method.

By using the operation described above, it becomes possible to machine the entire root section of turbine blades in one or more machine setups.

A. Taper side machining
B. Straight side machining
C. Roughing hooks and machining tang fits to finish or with stock
D. Machining curvature on hooks using the process described above
E. Machining sides to finish
F. Machining corners on dove tail shape
G. Steam balance hole machining can also be done in this setup if required

The order of the operation A – G can be changed if necessary and steps can be added or removed if required.

The entire machining process for machining turbine blade root sections in one setup or multiple setups (to use other machines) is an aspect the instant invention of the instant invention.

What is claimed:

Sub A 10

1. A method of determining machining instructions during machining of a workpiece using a machine having a cutter, the surfaces of the workpiece being defined by a plurality of programmed instructions obtained by trigonometric analysis of required curvatures of the surfaces;

2. The method of Claim 1 wherein said trigonometric analysis of the required curvatures of the surfaces comprises a graphical construction of the required surfaces relative to the application of the cutting tool to the required curvatures of the root section of the turbine blade, said graphical construction consisting essentially of a trigonometric analysis, said root section comprising at least one hook holding key;

3. The method of Claim 1 wherein said trigonometric analysis of the required curvatures of the surfaces determines the path of said cutter as a curved convex radius of E plus